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# **Epidemiological Bulletin**

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## 1. POLIOMYELITIS

Twenty (20) Acute Flaccid Paralysis cases were notified to the Epidemiology Unit during the 4<sup>th</sup> quarter 2009. This contrasts with the 29 and 23 AFP cases each reported during the 4<sup>th</sup> quarter 2008 and 2007 respectively. The total number of reported cases at completion of the 4<sup>th</sup> quarter 2009 did not make up the expected number of AFP cases for a quarter to make up a non-polio AFP rate of 2 per every 100,000 under 15-year olds according to WHO surveillance criteria. Twenty eight cases for a quarter or 112 AFP cases for a year are expected to achieve this rate. At completion of this year by the end of this quarter, 78 AFP cases have been reported which yielded a rate of 1.4 per 100,000 under 15 year olds.

### Notification of AFP Cases from Hospitals

The main sentinel site for AFP, Lady Ridgeway Children's Hospital (LRH), Colombo which is a tertiary care center which receives referrals from other hospitals in the country has reported the highest number of cases (7 i.e.35%) for the quarter out of the 58 sentinel sites in the country. Teaching Hospital Karapitiya and Teaching Hospital Kandy had reported 3 cases (15%) each in this quarter. General Hospital Polonnaruwa from the North Central Province of the country reported 2 AFP cases for the quarter. GH Matara, GH Badulla, GH Moneragala, GH Kalutara and Sirimavo Bandaranayake memorial Children's Hospital reported one case each during the current quarter.

### Distribution of AFP Cases by Provinces, Districts & MOH Areas

Moneragala district in the Uva Province had reported the highest number of AFP cases, 3 for the quarter. Kalutara in the Western Province, Matara of Southern Province and Ampara of Eastern province reported two AFP cases each in this quarter. From the Northern Province, only Vavuniya district reported an AFP case within the quarter. Only Kilinochchi and Mannar districts did not report any cases for the whole year. The complete list of distribution of AFP cases according to the province, district and MOH area is given in Table 1.

### Seasonal Distribution of AFP Cases

Eight cases (40%) were reported in October. The number reported for the months of November and December was 6 each (30%).

### Distribution of AFP Cases by Age and Sex

Almost half of all AFP cases (9 i.e.45%) reported in the 4<sup>th</sup> quarter this year were between 1 - 4 years of age. A similar trend was seen last year where 48% of the cases were between 1 - 4 years of age. In 2009 4<sup>th</sup> quarter, six (30%) and 3 (15%) children belonged to 5 - 9 year and 10 - 15 year age groups respectively and there were

Table 1

### GEOGRAPHICAL DISTRIBUTION OF AFP CASES – 4<sup>TH</sup> QUARTER 2009

Province	District	MOH Area	Number of AFP cases
Western	Colombo	Homagama	1
		Gampaha	1
		Kalutara	1
		Walallavita	1
Southern	Galle	MC Galle	1
		Akuressa	1
		Malimbada	1
	Hambantota	Tissamaharama	1
Central	Kandy	Kundasale	1
		Nuwara Eliya	1
Saba-ragamuva	Ratnapura	Eheliyagoda	1
North Western	Puttalam	Mundel	1
Eastern	Ampara	Padiyatalawa	1
		Dehiat-takandiya	1
		Batticaloa	Kathankudi
North Central	Polonnaruwa	Hikurakgoda	1
Uva	Moneragala	Madulla	1
		Bibila	1
		Sevanagala	1
Northern	Vavuniya	Vavuniya	1
<b>Total</b>			<b>20</b>

only 2 cases aged less than 1 year.

Almost two thirds of all AFP cases (13 i.e.65%) reported in the 4<sup>th</sup> quarter 2009 were male. This compares similarly with the same quarter in 2008 where more males (62%) than females were reported.

Table 2 shows the age and sex distribution in 4<sup>th</sup> quarter 2009.

### Laboratory Surveillance of AFP Cases

Two stool samples collected within 14 days of onset of paralysis are required at the Medical Research Institute for polio virology. According to WHO criteria these samples should be of 'good condition' as well as timely. Being of correct quantity (8-10g), being sent in a leak proof container with no evidence of spillage or leakage and presence of ice in the container on receipt are the criteria to complete to make the samples of 'good condition'.

Sixteen cases out of the 20 AFP cases (80%) reported in the 4<sup>th</sup> quarter 2009 had two timely stool samples sent to MRI for polio virology. Only

3 cases reported had stool samples collected late from respective institutions. A case from LRH had no stool samples collected.

### National Polio Expert Committee

The National Polio Expert Committee consists of experts from fields of paediatrics, virology, epidemiology, clinical neurology and neurophysiology. The expert committee meets once every quarter of the year to discuss AFP cases that could not be discarded on laboratory results. In 4<sup>th</sup> quarter 2009, the Expert Committee met and discussed the summary of activities of the AFP surveillance programme and the AFP cases that were scheduled to be reviewed by the committee. All the cases discussed had stool samples collected late with negative virology results and had persistent residual paralysis at 60

Table 2

#### DISTRIBUTION OF AFP CASES BY AGE AND SEX – 4<sup>TH</sup> QUARTER 2009

Age Group	Sex		Total
	Male	Female	
<1 year old	1	1	2
1-4 year old	7	2	9
5-9 year old	3	3	6
10-15 year old	2	1	3
<b>Total</b>	<b>13</b>	<b>7</b>	<b>20</b>

days of onset of paralysis.

## 2. CHOLERA

No confirmed cases of cholera were reported to the Epidemiology Unit during the 4th quarter 2009. Last case of cholera was reported in the country in January 2003.

## 3. TETANUS

During the 4th quarter 2009, 09 tetanus cases were notified to the Epidemiology Unit. This is in comparison to 5 cases reported during the previous quarter and 9 cases in the corresponding quarter of 2008.

Eight cases were investigated and 5 were compatible with case definition of tetanus (Table 3). Four deaths due to tetanus were reported during the quarter of which 3 were over the age of 60 years. No cases of neonatal tetanus were reported during the quarter.

## 4. MEASLES

During the 4th quarter 2009, 35 cases of measles were notified to the Epidemiology Unit compared to 82 cases notified during the previous quarter and 21 cases in the corresponding quarter of last year.

Only fourteen (14) cases have been investigated during the current quarter which needs improvement since this data is used to monitor the progress of measles immunization programme in the country. Only 7 cases had symptoms compatible with the case definition of measles

Table 3

#### SELECTED CHARACTERISTICS OF CONFIRMED CASES OF TETANUS – 4<sup>TH</sup> QUARTER 2009 (N = 08)

Sex	Male	7
	Female	1
Age group	40-44	2
	45-49	1
	55-59	2
	>=60	3
District	Anuradhapura	2
	Badulla	1
	Batticaloa	2
	Kalutara	1
	Kandy	2
	Immunization status	Immunized
Non immunized		0
Unknown		6

Table 4

#### SELECTED CHARACTERISTICS OF CONFIRMED CASES OF MEASLES – 4<sup>TH</sup> QUARTER 2009

Sex	Male	5
	Female	2
Age group	< 9 months	2
	1-15	2
	>15	3
District	Jaffna	2
	Galle	1
	Nuwara-Eliya	1
	Badulla	1
	Polonnaruwa	1
	Vavuniya	1

(Table 4).

## 5. LEPTOSPIROSIS

During the 4th quarter 2009, 1632 cases and 13 deaths (CFR 0.77%) due to Leptospirosis were notified to the Epidemiology Unit compared to 1567 cases and 61 deaths in the previous quarter and 2046 cases and 34 deaths during 4th quarter 2008.

The sentinel surveillance sites reported 786 cases (48.1% of the total) and 41 deaths during the current quarter.

Majority (65%) were in the 25-54 years age group and male:female ratio is 6:1.

## 6. HUMAN RABIES

Twenty two (22) cases of human rabies were notified to the Epidemiology Unit in the 4th quarter 2009, compared to 8 cases in the previous quarter and 12 cases in the corresponding quarter of year

2008. Distribution of cases by district is given in Table 31.

### Animal Rabies

During the quarter 194 dogs were reported positive for rabies compared to 155 in the previous quarter and 210 in the corresponding quarter of 2008. In addition the following animals were also reported positive;

Cats-23, Wild Animals-03, Domestic Ruminants-04

### Rabies Control Activities\*

**Dog vaccination** - A total of 262171 dogs were immunized during the 4th quarter 2009 when compared to 319944 in the previous quarter and 316865 in the corresponding quarter of last year.

### Animal Birth Control

**Chemical** - 10550 female dogs were injected with birth control injections (Progesterone) during the quarter under review.

**Surgical** - 53002 female dogs were subjected to sterilization by surgical method during the quarter under review.

\*Source – Director/PHVS

## 7. ENTERIC FEVER

In the 4th quarter 2009, a total of 566 cases of enteric fever were notified to the Epidemiology Unit, compared to 831 cases in the previous quarter and 401 cases in the corresponding quarter of 2008. The districts of Jaffna (172) and Vavuniya (62) reported the highest number of cases. (Table 31).

The MOH areas Vavuniya (48), Uduvil (32) and MC Jaffna (31) notified a large number of cases during the quarter under review.

## 8. VIRAL HEPATITIS

In the 4th quarter 2009, 884 cases of viral hepatitis were reported to the Epidemiology Unit, compared to 2114 cases in the previous quarter and 381 cases in the corresponding quarter of 2008.

Among the reported cases, 637 were investigated and confirmed as viral hepatitis. RDHS area Ratnapura notified the highest number of cases (123) accounting for 14.0% of the total case load. The MOH areas Eheliyagoda (73 cases) in the Ratnapura district and Uhana (55 cases) in the Ampara district have reported the highest number of cases.

**TABLE 6 : RESULTS OF BLOOD SMEAR EXAMINATION FOR MALARIA PARASITES—4<sup>TH</sup> QUARTER 2009**

	4 <sup>th</sup> Quarter 2008	4 <sup>th</sup> Quarter 2009
No. of blood smears examined	264414	244906
No. of positives	553	107
No. of <i>P. vivax</i>	553	96
No. of <i>P. falciparum</i>	20	9
No. of mixed infections	0	2
No. of infant positives	1	0
Slide positivity rate (S.P.R.)	0.21%	0.04%
P.v. : P.f. ratio	27:1	11:1
Percentage of infant positives	0.18%	0%

## 9. DYSENTERY

In the 4th quarter 2009, 1960 cases of dysentery were notified to the Epidemiology Unit, compared to 1796 cases in the previous quarter and 1975 cases in the corresponding quarter of 2008. The Districts of Badulla (178), Kandy (147) and Batticaloa (120) notified the highest number of cases.

## 10. JAPANESE ENCEPHALITIS (J.E.)

During the 4<sup>th</sup> quarter in 2009, 42 cases of Encephalitis were reported to the Epidemiology Unit. This is in comparison to 42 cases of JE in the previous quarter of 2009 and 61 cases for the corresponding quarter in 2008. Special investigation reports were received for 9 notifications and investigation rate was 24.3%.

During the quarter, 5 cases were found to be clinically confirmed as JE at the MRI. Of these, 2 confirmed cases of JE were reported through the special surveillance system. Among the confirmed cases 2 were under 10 years of age while 2 were in the age group of 11-20 years.

No deaths were reported due to JE during the quarter. Number of deaths reported in the previous quarter in 2009 and the corresponding quarter in 2008 respectively were 1 and none.

Table 5

### SELECTED CHARACTERISTICS OF CONFIRMED CASES OF JE – 4<sup>TH</sup> QUARTER 2009 (N = 05)

Sex	Male	3
	Female	2
Age group	<10 years	2
	11-19 years	2
	>20	1
District	Gampaha	2
	Kalutara	1
	Trincomalee	1
	Unknown	1
Immunization status	Immunized	0
	Non immunized	2
	Unknown	3

## 11. MALARIA

During the 4th quarter 2009, there was an increase in the incidence of malaria in comparison to the same period of 2008 as seen in Table 6.

Distribution of cases by RMO (Regional Malaria Officer) division is shown in Table 7.

Table 7

**DISTRIBUTION OF MALARIA CASES BY RMO  
DIVISION - 4<sup>TH</sup> QUARTER 2009**

RMO	Blood smears	Positives	P.v.	P.f./ Mixed
Colombo	19051	3	2	1
OGampaha	9018	1	1	0
Kalutara	4210	0	0	0
Kandy	9896	9	4	5
Matale	5542	1	0	1
Nuwara Eliya	619	0	0	0
Galle	5005	1	0	1
Matara	4679	0	0	0
Hambantota	6863	0	0	0
Jaffna	25407	2	1	1
Kilinochchi	24	24	24	0
Mannar	1526	10	10	0
Vavuniya	6621	5	5	0
Mullaitivu	20	20	20	0
Batticaloa	14628	1	1	0
Ampara	6586	1	1	0
Trincomalee	22177	3	2	1
Kurunegala	19857	2	1	1
Maho	7224	1	1	0
Puttalam	7117	0	0	0
Anuradhapura	21941	2	2	0
Polonnaruwa	18091	0	0	0
Badulla	3310	1	1	0
Moneragala	8587	19	19	0
Ratnapura	5474	0	0	0
Kegalle	2779	1	1	0
Kalmunai	8654	0	0	0
<b>TOTAL</b>	<b>244906</b>	<b>107</b>	<b>96</b>	<b>11</b>

P.v.– Plasmodium vivax

P.f.- Plasmodium falciparum

## 12. DENGUE FEVER (D.F.)/ DENGUE HAEMORRHAGIC FEVER (D.H.F.)

During the 4th quarter 2009, 8009 cases of DF/DHF and 81 deaths were reported (CFR 1.01%) when compared to 11,617 cases and 75 deaths (CFR 0.65%) reported during the previous quarter.

Table 8 shows the distribution of DF/DHF cases and deaths in the RDHS divisions during the quarter.

Results of entomological surveillance carried out in the Western Province by the Department of Entomology, MRI during the current quarter is given in Table 9.

During the 4th quarter 2009, 1891 blood samples were tested using 1gM capture ELISA test and haemagglutination inhibition test at the Department of Virology, MRI and 1311 samples were confirmed as positive (Table 10).

Table 8

**MORBIDITY AND MORTALITY DUE TO DF/DHF - 4<sup>TH</sup> QUARTER 2009**

RDHS Division	Cases	Percentage	Deaths
Colombo	1325	16.5	11
Gampaha	1247	15.6	13
Kalutara	192	2.4	1
Kandy	543	6.8	8
Matale	651	8.1	1
Nuwara Eliya	75	0.9	1
Galle	137	1.7	0
Hambantota	163	2.0	3
Matara	106	1.3	0
Jaffna	392	4.9	6
Kilinochchi	0	0	0
Mannar	14	0.2	01
Vavuniya	1056	13.2	19
Mullaitivu	0	0	0
Batticaloa	134	1.7	2
Ampara	54	0.7	0
Trincomalee	56	0.7	1
Kurunegala	434	5.4	2
Puttalam	285	3.6	4
Anuradhapura	169	2.1	3
Polonnaruwa	55	0.7	0
Badulla	117	1.5	0
Moneragala	55	0.7	0
Ratnapura	194	2.4	2
Kegalle	319	4.0	2
Kalmunai	236	2.9	1
<b>TOTAL</b>	<b>8009</b>	<b>100</b>	<b>81</b>

Table 9

**AEDES LARVAL DENSITIES (BRETEAU INDEX) IN THE WESTERN PROVINCE - 4TH QUARTER 2009**

MOH Area	October		November		December	
	A	B	A	B	A	B
CMC	4.2	0.7	4.4	4.4	2.6	0
Nugegoda	6.9	5.2	4.6	5.7	4.0	6.0
Maharagama	4.0	7.0	0	17.6	5.0	11.0
Moratuwa	7.7	4.3	8.4	5.9	8.0	8.0
Kaduwela	0	16.0	1.7	15.4	6.6	16.0
Piliyandala	0	12.2	0	13.9	0	13.9
Kelaniya	12.0	19.0	10.4	1.6	5.3	8.8
Ragama	0	16.3	0.6	8.6	0	1.8
Ja-Ela	4.8	10.9	3.0	11.0	3.5	12.0
Wattala	1.4	5.5	11.0	14.0	0.8	3.5
Dompe	0.5	4.1	0	8.1	2.0	7.0
Mahara	1.0	4.0	0	20.0	7.0	26.0
Mirigama	0	9.0	1.0	15.3	0	12.8
Biyagama	0	6.0	2.0	17.0	3.0	15.0
Seeduwa	0	2.8	1.0	5.0	11.0	15.1
Kalutara	0	3.5	0	23.0	0	16.8

(A) = *Aedes aegypti*

(B) = *Aedes albopictus*

Number of premises examined per area = 300

Table 10

**DHF STATISTICS FROM DEPARTMENT OF  
VIROLOGY, MRI - 4<sup>TH</sup> QUARTER 2009**

Month	Clinically	Serologically
October	568	350
November	558	345
December	765	616
<b>Total</b>	<b>1891</b>	<b>1311</b>

**13. TUBERCULOSIS**

A total of 2871 tuberculosis patients were registered for 4th quarter 2009 by the National Programme for Tuberculosis Control and Chest Diseases. Of this total, 2141 suffered from pulmonary disease, and the balance 730 patients from non-pulmonary disease. Of these patients 1460 were bacteriologically confirmed with a bacteriological confirmation rate of 68.19%. The distribution of tuberculosis patients by RDHS division is given in Table 11.

**B.C.G. vaccination**

A total of 94277 B.C.G. vaccinations were carried out during the quarter with 95.88% coverage.

Table 11.

**TUBERCULOSIS PATIENTS BY RDHS DIVISIONS  
- 4<sup>TH</sup> QUARTER 2009**

RDHS DIVISION	PTB	EPTB	Total	Pulmonary TB Direct Smear	
				No. +VE	%
Colombo	470	156	626	369	78.5
Gampaha	177	48	225	143	80.8
Kalutara	199	48	247	133	66.8
Kandy	168	63	231	78	46.4
Matale	41	10	51	33	80.5
Nuwara Eliya	36	16	52	16	44.4
Galle	125	49	174	88	70.4
Hambantota	43	9	52	31	72.1
Matara	45	17	62	36	80.0
Jaffna	94	20	114	29	30.9
Vavunia	22	9	31	17	77.3
Kilinochchi	4	6	10	4	100.0
Mannar	3	0	3	1	33.3
Mullativu	3	2	5	1	33.3
Ampara	53	14	67	25	47.2
Batticaloa	31	11	42	17	54.8
Trincomalee	80	11	91	19	23.8
Kurunegala	109	74	183	70	64.2
Puttalam	55	11	66	47	85.5
Anuradhapura	54	25	79	41	75.9
Polonnaruwa	37	8	45	30	81.1
Badulla	46	22	68	32	69.6
Monaragala	16	6	22	11	68.8
Kegalle	72	34	106	55	76.4
Ratnapura	155	61	216	131	84.5
Kalmunai	3	0	3	3	100.0
<b>Total</b>	<b>2141</b>	<b>730</b>	<b>2871</b>	<b>1460</b>	<b>68.2</b>

PTB-Pulmonary Tuberculosis

EPTB- Extra Pulmonary Tuberculosis

Data from Central TB Register

Source - National TB Register

**14. SURVEILLANCE AT SEA PORT**

Surveillance activities carried out by the Port Health Office at Colombo Sea Port during the 4th quarter 2009, is given below.

	Total
<b>1. Yellow Fever Vaccination</b>	
Total number vaccinated	- nil
<b>2. Granting Pratique to Vessels</b>	
Number issued	- 1045
<b>3. Deratting Certification</b>	
Number issued	- 22

Details of the vaccinations carried out by the Assistant Port Health Office during the 4th quarter is as follows;

	Total
a. Yellow fever	630
b. Meningococcal meningitis	202
C. Polio vaccination	189

**15. SURVEILLANCE AT AIRPORT**

Surveillance activities carried out at the International Airport, Katunayake during the 4th quarter 2009 is given below.

<b>1. Yellow Fever Surveillance</b>		
a. No. with valid certificate	-	01
b. No. without valid certificate & Departed	-	-
c. No. without valid certificate Isolated	-	-
<b>2. Airport Sanitation</b>		
a. No. of sanitary inspections carried out including food establishments	-	36
b. No. of food samples taken under Food Act	-	03
c. No. found defective	-	00
d. No. of court cases/prosecuted/warned	-	02
e. No. of water samples tested	-	06
f. No. reported contaminated	-	00
<b>3. Release of human remains</b>		
a. No. of human remains released	-	124
b. No. referred to JMO for post-mortem	-	06
c. No. alleged suicide	-	06
<b>4. Other Health Activities</b>		
a. Polio Vaccination No. of doses given	-	0

## 16. LEPROSY

### QUARTERLY RETURN OF LEPROSY STATISTICS - 4<sup>TH</sup> QUARTER 2009

Table 12.

#### 1. National

	At the end of the quarter			Cumulative for end of the quarter		
	4 <sup>th</sup> quarter 2009	4 <sup>th</sup> quarter 2008	Diff. (%)	4 <sup>th</sup> quarter 2009	4 <sup>th</sup> quarter 2008	Diff. (%)
New patients detected	455	375	21.3	1876	1964	-4.5
Children	50	34	47.0	186	204	-8.8
Grade 2 Deformities	24	34	-29.4	119	159	-25.1
Multi-Bacillary	207	180	15.0	894	891	0.3
Females	199	157	26.7	817	833	-1.9

#### 2. Districts

District	New patients	Deformities	Child	MB	Females
Colombo	98	03	11	51	45
Gampaha	80	05	08	27	40
Kalutara	58	04	12	22	23
<b>Western</b>	<b>236</b>	<b>12</b>	<b>31</b>	<b>100</b>	<b>108</b>
Galle	04	01	0	02	02
Matara	10	01	0	07	04
Hambantota	08	0	0	05	02
<b>Southern</b>	<b>22</b>	<b>02</b>	<b>0</b>	<b>14</b>	<b>08</b>
Kandy	08	0	01	04	0
Matale	08	01	01	03	05
Nuwara Eliya	02	0	0	02	0
<b>Central</b>	<b>18</b>	<b>01</b>	<b>02</b>	<b>09</b>	<b>05</b>
Anuradhapura	14	01	01	05	06
Polonnaruwa	09	0	0	04	03
<b>North Central</b>	<b>23</b>	<b>01</b>	<b>01</b>	<b>09</b>	<b>09</b>
Kurunegala	36	02	03	20	16
Puttalam	14	0	04	06	07
<b>North Western</b>	<b>50</b>	<b>02</b>	<b>07</b>	<b>26</b>	<b>23</b>
Kegalle	14	0	0	09	03
Ratnapura	28	02	04	09	15
<b>Sabaragamuwa</b>	<b>42</b>	<b>02</b>	<b>04</b>	<b>18</b>	<b>18</b>
Badulla	06	01	0	03	0
Moneragala	04	0	01	02	01
<b>Uva</b>	<b>10</b>	<b>01</b>	<b>01</b>	<b>05</b>	<b>01</b>
Trincomalee	01	0	0	01	0
Batticaloa	27	0	03	09	18
Ampara	08	02	01	05	03
Kalmunai	08	01	0	03	02
<b>Eastern</b>	<b>44</b>	<b>03</b>	<b>04</b>	<b>18</b>	<b>23</b>
Jaffna	08	0	0	07	04
Vavuniya	02	0	0	01	0
Mannar	0	0	0	0	0
Mullativu	0	0	0	0	0
Kilinochchi	0	0	0	0	0
<b>Northern</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>08</b>	<b>04</b>
<b>Sri Lanka</b>	<b>455</b>	<b>24</b>	<b>50</b>	<b>207</b>	<b>199</b>

Source : Anti Leprosy Campaign

## 17. SURVEILLANCE REPORT ON AEFI– 2009

Surveillance of Adverse Events Following Immunization (AEFI) has effectively continued in the fourth quarter 2009 (Table 13). Completeness of reports has reached 91.2% while 45.7% reports were received in time at the Epidemiology Unit indicating good compliance for the system by the MOOH. Almost 60% districts in the country have found at least one adverse event during a month probably due to good awareness and enthusiasm for surveillance by the health staff in MOH areas. No surveillance had been carried out in the Killinochchi and Mullativu districts as there were logistic reasons following conflict situation.

Kalmunai sent the highest number of reports (99.4%) while Mannar (39.6%) have sent reports than other districts except Killinochchi and Mullativu for completeness.

However, there was only a marginal improvement in overall timeliness when compared to the corresponding quarter last year, from 40.8% to 45.7%.

Table 13.

### COMPLETENESS AND TIMELINESS OF MONTHLY REPORTING AND RECEIPT OF “NIL” REPORTS OF AEFI BY RDHS DIVISIONS - 4<sup>TH</sup> QUARTER 2009

RDHS Division	(%) Completeness	(%) Timeliness	(%) “Nil” Returns	Reported AEFI	
				Number	Rate
Colombo	94.0	38.6	26.6	533	93.0
Gampaha	92.8	47.9	21.6	408	69.1
Kalutara	93.8	29.6	35.6	365	104.7
Kandy	92.4	41.7	38.3	437	103.2
Matale	91.7	62.9	42.4	191	118.7
Nuwara Eliya	95.5	51.7	51.7	144	62.9
Galle	92.1	41.0	49.5	255	81.9
Hambantota	97.7	44.2	14.0	452	226.3
Matara	95.1	57.7	62.4	143	56.8
Jaffna	92.9	19.2	33.3	171	111.9
Kilinochchi	0.0	0.0	0.0	0	0.0
Mannar	39.6	26.3	36.8	62	241.1
Vavuniya	83.3	32.5	85.0	23	36.8
Mullativu	0.0	0.0	0.0	0	0.0
Batticaloa	95.5	32.5	50.8	250	129.7
Ampara	96.4	32.1	46.9	90	91.0
Trincomalee	95.8	47.0	73.9	57	39.5
Kurunegala	92.5	36.0	30.6	426	85.2
Puttalam	93.5	46.5	28.7	161	63.5
Anuradhapura	94.7	53.7	36.6	337	106.6
Polonnaruwa	95.2	71.3	45.0	113	82.4
Badulla	94.4	67.1	27.6	334	130.6
Moneragala	93.2	50.4	51.2	129	83.8
Ratnapura	98.6	36.2	40.4	354	109.0
Kegalle	94.7	71.2	15.2	318	131.7
Kalmunai	99.4	33.5	64.5	140	84.0
<b>Sri Lanka</b>	<b>91.2</b>	<b>45.7</b>	<b>40.7</b>	<b>5893</b>	<b>96.4</b>

\* Rate Per 100,000 immunizations

Best timeliness was reported from Polonnaruwa (71.3%) followed by Kegalle district (71.2%) while worst timeliness was from Jaffna district (19.2%).

Highest percentage of nil reports were received from Vavunia district (85%) followed by Trincomalee district (73.9%) which is much higher than the Sri Lanka average (40.4%). The lowest percentage (14%) of such returns was received from the Hambantota district and followed by Kegalle district (15.2%).

Highest rate (241.1 per 100,000 immunizations) of AEFI was reported as same as the previous quarter from Mannar district with the number of 62 AEFI. Highest number (533) was reported from the Colombo district with the rate of 93.0 per 100,000 immunizations which is marginally higher than the 4<sup>th</sup> quarter 2008 (468 AEFIs and rate 73.0 per 100,000 immunizations). The number and rates of reported different AEFI against different vaccines are given in table 2. The highest number (4581) and rate of AEFI (348.7 per 100,000 immunizations) were reported against DPT vaccine.

When compared with the 4<sup>th</sup> quarter 2008 for same, there was a considerable decrease in the rate of AEFI reported for DPT in 2009 (Table 14).

Total of 10 deaths temporally related to immunization were reported as of 4<sup>th</sup> quarter 2009. This includes deaths due to anaphylaxis following Rubella immunization in Matara and Wariyapola MOH area, Kurunagala district.

Another death temporally related to Rubella immunization was reported from MOH division Ginigathena but on investigation it was found that a cyst in the third ventricle of the brain blocking the CSF pathway was the cause for the death.

Another death was reported following aTd vaccination (three days following vaccination) in Kandekatiya MOH area. The child had bronchial asthma and was admitted to DH Kandekatiya with a history of breathlessness and cyanosis and the cause of death was determined as status asthmaticus.

Six deaths temporally related to DPT vaccine were reported from Yatiyantota, Lankapura Nochchiyagama, CMC and Ambalantota MOH areas. The infant who died in Yatiyantota MOH

area was four months old and was admitted to DH Karawanalla with a history of fever, breathlessness and pallor, a day following immunization. The child died on 3days following immunization and the post mortem revealed pneumonic changes in lungs.

The child from Ambalantota MOH area developed symptoms such as refusal of feeds; lethargy and grunting after awaking from sleep on the second day following DPT immunization. Baby was admitted to P/U Ambalantota and transferred immediately to G/H Hambantota with oxygen where she died soon after admission. Post mortem revealed that she had aortic valve stenosis, dilated hypertrophied left ventricle, dilated right atria and ventricle, free fluid in the chest cavity and pericardial cavity, milky substance in the proximal and distal airways. For the definitive cause of death histopathological reports are required.

Out of two deaths reported from Lankapura MOH area following DPT vaccine, a 2 months old infant had a history of excessive crying about 6 hours of immunization but did not have fever cough or cold. Second day following immunization, the child was taken to a medical

Table 14

## NUMBER AND RATE OF SELECTED AEFI REPORTED BY VACCINE AND BY TYPE OF AEFI

Vaccine	Seizure	Allergic	Abscess	Severe Local reactions	High Fever	Lymphadenitis	Encephalitis	Paralysis of body	Meningitis	Anaphylactic Shock	Nodule	GBS	Arthralgia	Encephalopathy	Persistent screaming	Injection Reaction	**Others	*HHE	Death	Total	Rate/ 100,000 dosed
<b>BCG</b>	0	4	24	4	6	6	0	0	0	0	3	0	0	0	0	0	1	2	0	50	14.9
<b>DPT</b>	318	726	582	455	1553	0	0	0	2	0	764	0	21	0	92	19	31	18	0	4581	348.7
<b>OPV</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
<b>Measles</b>	15	139	4	15	59	0	0	0	0	0	2	0	2	0	2	0	3	0	0	241	68.7
<b>DT</b>	4	64	6	28	30	0	0	0	0	0	17	0	2	0	3	0	1	1	0	156	48.4
<b>TT</b>	1	35	1	9	5	0	0	0	0	0	4	0	0	0	0	0	1	0	0	56	17.6
<b>Rubella</b>	0	178	5	2	4	5	0	0	0	2	1	0	2	0	40	15	0	0	2	254	185.2
<b>JE</b>	20	167	1	12	53	0	0	0	0	0	0	0	9	0	1	1	9	2	0	275	131.8
<b>ATd</b>	0	17	0	2	2	0	0	0	0	0	0	0	0	0	12	5	1	0	39	24.0	
<b>MR</b>	7	165	2	10	16	0	0	0	0	0	0	0	0	0	1	3	1	0	205	62.8	
<b>Hep</b>	0	9	10	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	21	2.1
<b>Others</b>	1	2	1	0	4	0	0	0	1	0	0	0	0	0	0	0	4	0	0	13	0.0
<b>Total</b>	<b>366</b>	<b>1506</b>	<b>636</b>	<b>537</b>	<b>1733</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>792</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>95</b>	<b>76</b>	<b>73</b>	<b>25</b>	<b>2</b>	<b>5893</b>	<b>96.4</b>

\*Characterizes hypo responsiveness, hypotonia & change of skin colour.

\*\* Weakness of the body & injection reaction which includes headache, vomiting faintish ness etc due to anxiety reaction.

as the child was continuously crying. She developed cough and cold on the same day. Third day she had lung signs. She died on 3<sup>rd</sup> day and post mortem findings identified right lung consolidation, left lung collapse and bilateral pleural effusion. The other 4 months old infant died 12 hours following DPT immunization. The baby was normal since he received vaccine at 10.30 am until he had gone to sleep after receiving his feed around 8.30 pm, but he suddenly woke up after few minutes with severe cough with vomiting and became cyanosed. She was taken to hospital immediately but death was pronounced on admission. Histopathological examination will review the cause.

A two months old baby in Nochchiyagama MOH area received DPT vaccine at 9.20 am on 14<sup>th</sup> November 2009 and died 14 hours later. Father of the baby noticed that baby was unresponsive and milk pouring from mouth and nose while he was sleeping. The baby was taken to hospital where death was pronounced.

A two months old baby in the Colombo Municipality area had been given DPT vaccine at 9.30 am on 8<sup>th</sup> December 2009. Two days later he developed severe cough and fever. While he was on the way to LRH he had vomiting followed by difficulty in breathing. About one hour after admission to LRH the baby died. Investigations are carrying out for cause of death.

## 18. SEXUALLY TRANSMITTED DISEASES

Table 15.

### NEW EPISODES OF STD/HIV/AIDS REPORTED OR TREATED AT STD CLINICS IN SRI LANKA\* - 4<sup>TH</sup> QUARTER 2009

Disease	New cases or new disease episodes during the quarter			Total new cases or new episodes for the calendar year up to end of the quarter **			
	Male	Female	Total	Male	Female	Total	
HIV positives <sup>1</sup>	23	12	35	92	45	137	
AIDS	3	4	7	10	10	20	
Syphilis	Early Syphilis <sup>2</sup>	43	18	61	143	68	211
	Late Syphilis <sup>3</sup>	93	73	166	322	230	552
	Congenital Syphilis <sup>4</sup>	1	1	2	4	1	5
Gonorrhoea <sup>5</sup>	61	57	118	267	227	494	
Ophthalmia neonatorum <sup>6</sup>	0	1	1	2	3	5	
Non specific cervicitis/urethritis	144	279	423	664	1133	1797	
Chlamydial Infection	2	1	3	2	6	8	
Genital Herpes	252	316	568	951	1210	2161	
Genital Warts	191	136	327	712	501	1213	
Chancroid	0	0	0	2	1	3	
Trichomoniasis	5	32	37	26	117	143	
Candidiasis	222	349	571	860	1327	2187	
Bacterial Vaginosis		356	356		1154	1154	
Other sexually transmitted diseases <sup>7</sup>	136	42	178	414	138	552	
Non-venerial <sup>8</sup>	1098	698	1796	3936	2758	6694	

\* - Central STD clinic Colombo and peripheral STD clinics of National STD/AIDS Control Programme of Sri Lanka

\*\* - includes adjustments for revised diagnosis, reporting delays or any other amendments

1 - includes AIDS cases

2 - diagnosed within 2 years of infection and considered to be infectious

3 - diagnosed after 2 years of infection and considered to be non-infectious

4 - includes both early and late cases

5 - includes presumptive Gonorrhoea

6 - includes both gonococcal and chlamydial conjunctivitis in neonatal period

7 - includes Lympho granuloma venerium, Granuloma inguinalae, Molluscum contagiosum, Scabies, Tinea, Hepatitis B etc.

8 - number of STD clinic attendees who were not having sexually transmitted diseases.

## 19. BACTERIOLOGY REPORT— 4TH QUARTER 2009— MEDICAL RESEARCH INSTITUTE

Table 16.

	OCT	NOV	DEC
<b>(A) CHOLERA</b>			
No. of stool specimens Examined	62	28	07
El Tor Cholera	0	0	0
Ogawa	0	0	0
Inaba	0	0	0
Cholera 0139	0	0	0
<b>(B) SALMONELLA</b>			
Blood— No. Examined	50	24	67
S.typhi	0	0	0
S.paratyphi	01	01	0
Stools—No. examined	182	101	83
S.typhi	0	0	0
S.paratyphi	0	0	0
Others	04	0	01
<b>(C) SHIGELLA</b>			
No. Examined	182	101	83
Sh.flexnery 1	02	0	0
Sh.flexnery 2	0	0	0
Sh.flexnery 3	0	0	0
Sh.flexnery 4	0	0	0
Sh.flexnery 5	0	0	0
Sh.flexnery 6	0	0	0
Sh. sonnei	07	04	03
Sh. Others	0	0	0
<b>(D) ENTEROPATHOGENIC E.COLI</b>			
No.Examined	32	25	32
No.+ve Group A	01	0	01
<b>(E) CAMPYLOBACTER</b>			
No.Examined	120	73	76
No. Positive	03	03	02

## 20. SURVEILLANCE REPORT ON INVASIVE BACTERIAL DISEASES -2009

Since the middle part of 2009, Invasive Bacterial Disease surveillance was carried out by the Epidemiology Unit in collaboration with the WHO at the LRH. Population eligible for surveillance was children aged 2-59 months of age admitted to LRH for pneumonia, sepsis and meningitis. During the year 2009, approach to surveillance was changed as only blood and CSF cultures compatible with the case definition of pneumonia, sepsis and meningitis were considered. Of the 377 blood cultures studied, number of *S. pneumoniae* isolates was 14. The isolation rate was 3.7%. Only 20 *Haemophilus influenzae* isolates (isolation rate -5.3%) were found while sub typing was not performed for *Haemophilus influenzae b*.

One hundred and thirty three CSF specimens eligible for surveillance were cultured. No *Streptococcus pneumoniae* isolates were found while 2 were *Haemophilus influenzae b* (isolation rate was 1.5 %). It is apparent that isolation of bacterial pathogens is an under estimate due to prior use of antibiotics. Latex antigen test results are sensitive even if prior antibiotics are used. Of 74 Latex antigen tests done, 1 was positive for *S. pneumoniae* and 4 for *H.influenzae* (test positivity rate was 1.35% and 5.45% respectively). During the year 2009, there were 15 patients in the age group of 2-59 months confirmed as Invasive Pneumococcal Disease and 26 patients with *H. influenzae*.

From 2005, results of 131 isolates of *S. pneumoniae* sent to the reference laboratory at the Christian Medical College at Vellore in India for sero-typing have been received . Seventy seven (58.7%) were from the LRH. Four of these isolates had been isolated from pleural fluid, knee joint and eye. Fifty four (41.3%) isolates of *S. pneumoniae* sent for serotyping were from sentinel hospitals. The age range of these patients varied from the surveillance age range at the LRH ( 2-59 months).

The distribution of serotypes of *S. pneumoniae* detected at the LRH is given in Table 18. The most common serotype found in patients at the LRH were 19F (19.4%), 14(16.9%), 23F (9.1%),6B (9.1%).

The distribution of serotypes of *S. pneumoniae* detected at sentinel hospitals is given in Table 19. The most common serotypes isolated in sentinel hospitals were 19F (24%) and 14(13%). This was similar to the findings at the LRH .

The sensitivity pattern of isolated *S.pneumoniae* are given in Table 20. *S.pneumoniae* isolates were sensitive mainly to Chloramphenicol (79.2%) and Cefotaxime (74.2%). They were mainly resistant to Erythromycin (64.2%) and Cotrimoxazole ( 57.5%)

TABLE 17: RESULTS OF SURVEILLANCE OF INVASIVE BACTERIAL INFECTIONS - 2005-2009

Year / month	Blood cultures			Cerebro spinal fluid (Cultures)					Cerebro spinal fluid (Latex test)				No of children		
	No of blood cultures	Positive for S. Pneumoniae	Positive for Haemophilus influenza b	Total CSF samples	Positive for S. Pneumoniae	Positive for Haemophilus influenza	Positive for Hib	No tested with Latex antigen	Positive for S. Pneumoniae	Positive for Haemophilus influenza	Positive for Haemophilus influenza b	Positive for S. Pneumoniae	Positive for Haemophilus influenza	Positive for S. Pneumoniae	Positive for Haemophilus influenza B
2005	1398	8	15	430	1	5	0	312	7	25	25	18	36	35	
2006	1686	10	18	361	4	11	0	338	3	16	15	16	29	27	
2007	1113	10	15	257	1	5	0	236	6	14	0	19	26	0	
2008	5298	37	50	1227	9	21	0	975	21	60	40	68	99	62	
2009	36	0	1	9	0	0	0	1	0	0	0	1	1	0	

TABLE 18: DISTRIBUTION OF SEROTYPES OF S. PNEUMONIAE DETECTED AT LADY RIDGEWAY HOSPITALS

Serotype	Number (%)
19F	15 (19.4%)
14	13(16.9%)
23F	07(9.1%)
6B	07(9.1%)
23A	03 ( 3.9%)
3	04(5.2%)
Non Typeable	04 (5.2%)
6A	02 (2.6%)
9V	02 (2.6%)
15b	02(2.6%)
1	01 (1.3%)
4	01 (1.3%)
13	01 (1.3%)
15	01 (1.3%)
16	01 (1.3%)
20	01 (1.3%)
29	01 (1.3%)
38	01 (1.3%)
11C	01 (1.3%)
16A	01 (1.3%)
18A	01 (1.3%)
35,42	01 (1.3%)
47	01 (1.3%)
47F	01 (1.3%)
9N	01 (1.3%)
Contaminated	03 (3.9%)
Total	77

TABLE 19: DISTRIBUTION OF SEROTYPES OF S. PNEUMONIAE DETECTED AT SENTINEL HOSPITALS

Serotype	Number
19F	13(24.1%)
14	07(13.0%)
47F	03(5.6%)
6B	03(5.6%)
9v	03(5.6%)
6A	02 (3.7%)
15B	02 (3.7%)
22F	02 (3.7%)
23A	02 (3.7%)
15C	01(1.9%)
17F	01(1.9%)
18F	01(1.9%)
19C	01(1.9%)
33B	01(1.9%)
Non typeable	03 ( 5.6%)
Contaminated/non growth	09 (16.8%)
Total	54

TABLE 20: SENSITIVITY PATTERN OF ISOLATED S.PNEUMONIAE

	Sensitive	Intermediary resistant	Resistant
Penicillin	48(40%)	41(34.2%)	31(25.8%)
Cotrimoxazole	30(25.0%)	21(17.5%)	69(57.5%)
Chloramphenicol	95(79.2%)	00	25(20.8%)
Erythromycin	42(35%)	01(0.8%)	77(64.2%)
Cefotaxime	89(74.2%)	25(20.8%)	06(5.0%)

## 21. SURVEILLANCE REPORT ON RABIES—2008

Human rabies is a notifiable disease in Sri Lanka. The number of human rabies deaths declined from 377 in 1975 to 51 in 2008 (Table 21) which were reported through the routine notification system and all cases had been confirmed as human rabies. The distribution of notification and confirmed cases of human rabies cases by Regional Director of Health Services divisions is given in Table 22. In 2008, the highest number of cases (11) was notified from the district of Kurunegala. Districts of Gampaha (7), Batticaloa (7), Galle (5) and Puttalam (5) also notified a higher number of cases.

### Age and Sex Distribution

The age distribution of investigated / confirmed cases of rabies for the year 2008 is given in Table 23. The highest percentage of cases (31 i.e. 61%) occurred in the age group 20-59 years. The next highest percentage of 17.6% (9 cases) occurred in age group 5-19 years followed by the elderly population (>60yrs) with 15.6% (8 cases) . No cases were reported in children less than 1 year of age. Similar pattern of age distribution was shown during 2001 – 2007, where the age group 20-59 years was the most affected. Reported male: female ratio of 4:1 (approximately) highlights the increased susceptibility of males (Table 24).

**TABLE 21: MORTALITY AND NOTIFICATION OF HUMAN RABIES CASES – 1991- 2008**

Year	No. of suspected cases notified ■	Cases Confirmed	
		Number	Rate(per 100,000 pop)
1991	133	136	0.79
1992	112	112	0.64
1993	104	98	0.55
1994	122	105	0.58
1995	178	124	0.68
1996	195	110	0.59
1997	150	135	0.72
1998	123	111	0.59
1999	194	110	0.58
2000	132	109	0.56
2001	105	83	0.43
2002	78	64	0.33
2003	86	76	0.39
2004	97	98	0.5
2005	55	55	0.3
2006	74	68	0.37
2007	55	55	0.27
2008	51	51	0.27

Source –

■ Epidemiology Unit (H399 & H411 and Special Investigation forms).

### Exposure Information

According to data analyzed through confirmed rabies cases, 47% (24 cases) human rabies were due to stray dogs. Dog (84%) is the main reservoir (43 cases) as well as the transmitter of rabies in the country. (Tables 25 & 26).

Since the National Rabies Control Programme (NRCP) commenced in 1975, animal vaccination and elimination activities were strengthened to a greater extent; dog vaccination has increased significantly from 1975 to 2008 (Table 27). It is important to maintain the dog vaccination strategy as a control measure. At least one third of human rabies cases (Table 25) were due to bites of household / neighbours' dog, which show high susceptibility and poor vaccination practices among household animals and the lack of responsibility by the dog owners. Routine dog vaccination is essential. It not only protects the animal, but also makes the public less susceptible to rabies. It also helps to arrest the transmission of virus among the animals too. However, partial and ad hoc dog vaccination practice may lead to an increase in the risk of rabies, particularly due to the false trust on the safety of the animal. Epidemiological investigation has revealed that in some cases post exposure treatment (PET) was not taken or not given assuming that the animal was immunized, but actually the animal has not been vaccinated completely and thereby not protected.

Though the public support for the dog vaccination is remarkable, there is a tendency of resistance for dog elimination, particularly from the animal lovers. Similar to dog vaccination, stray dog elimination has increased steadily from 1975 to 2001. But since 2006 onwards local government authorities have completely stopped the dog elimination activities.

Table 28 shows the Positivity rate of human brains tested for rabies at the laboratory of the Medical Research Institute, Colombo.

### Rabies Control Programme

The Public Health Veterinary Services (PHVS) Unit is the body to control and prevent human and animal rabies in the country. The Epidemiology Unit is the National centre for disease surveillance and carries out all surveillance activities related to human rabies in the country through its wide network at the regional and divisional levels. Strategies of rabies control in Sri Lanka are; surveillance of rabies, promotion of responsible dog ownership, immunization of domestic, community and stray dogs against rabies, birth control for dogs, destruction of stray dogs suspected of incubating the rabies virus, post-exposure treatment (PET), training and health education, enforcement of rabies control legislation and promotion of multi-sectoral co-operation and community participation.

Ministry of Health has appointed the National Task Force for rabies elimination in 2004. This Task Force will develop a National action plan for the elimination of rabies and at present sub committees are developing and piloting the prevention and control strategies.

The Task Force is focusing on the implementation of most of these activities through the local government authorities with the cooperation of the MOOH. The necessary legislations have been developed.

Most of the lives would have been saved, if they had received the PET as recommended. Public awareness on PET should be strengthened. Also the rational post exposure treatment practices at the hospital should be reviewed regularly as a

part of the clinical audit for PET. PET is the most expensive single item among the drug allocations of the Ministry. Exposure opportunities are to be minimized by integrated activities of control of dog population and vaccination. Periodical review of the efficacy of dog vaccination is another aspect for future research. Strengthening present regulations and creating community responsibility, particularly in dog ownership are equally important in rabies control activities in the country.

**TABLE 22: NUMBER OF CONFIRMED CASES OF HUMAN RABIES BY RDHS DIVISIONS– 2008**

DPDHS DIVISION	Number of Cases confirmed	% of Cases confirmed	Rate / 100,000 population
Gampaha	7	7	0.30
Kalutara	2	2	0.17
Kandy	2	2	0.15
Nuwara Eliya	1	1	0.14
Galle	5	5	0.47
Hambantota	1	1	0.18
Matara	1	1	0.12
Batticaloa	7	7	1.20
Kurunegala	11	11	0.71
Puttalam	5	5	0.63
Anuradhapura	3	3	0.37
Badulla	1	1	0.12
Moneragala	2	2	0.44
Kegalle	1	1	0.12
Mannar	1	1	1.12
Mullativu	1	1	1.79
SRI LANKA	51	51	0.27

**TABLE 23: AGE DISTRIBUTION OF CONFIRMED HUMAN RABIES CASES, 2001-2008**

Age Group	2001	2002	2003	2004	2005	2006	2007	2008
<1 year	0	0	0	0	0	0	0	0
1 - 4 years	8	2	6	3	0	2	3	3
5 - 19 years	17	15	19	17	11	18	6	9
20 - 59 years	31	29	48	46	30	32	35	31
60 & Over	10	10	3	16	9	16	11	8

Source – Epidemiology Unit

**TABLE 24 : SEX DISTRIBUTION OF CONFIRMED HUMAN RABIES CASES, 2001-**

Sex	2001	2002	2003	2004	2005	2006	2007	2008
Male	51	38	58	59	38	54	37	40
Female	15	18	18	22	12	14	18	11

Source – Epidemiology Unit

**TABLE 25: DISTRIBUTION OF HUMAN RABIES CASES BY NATURE OF OWNERSHIP OF ANIMAL, 2001 – 2008**

Type of animal	2001	2002	2003	2004	2005	2006	2007	2008
Household Pet	34	29	18	13	11	13	10	13
Neighbors' Pet	6	4	9	7	8	11	4	5
Stray	16	18	35	36	24	28	21	24
Unknown	10	5	14	24	7	16	20	9

Source – Epidemiology Unit

**TABLE 26: DISTRIBUTION OF HUMAN RABIES CASES BY TYPE OF ANIMAL, 2001 – 2008**

Animal	2001	2002	2003	2004	2005	2006	2007	2008
Dog	49	36	63	69	42	58	45	43
Cat	5	5	4	2	1	1	4	2
Other	3	15	4	2	0	2	0	4
unknown	9	6	5	7	7	7	6	2

Source – Epidemiology Unit

**TABLE 27: RABIES CONTROL ACTIVITIES AND NUMBER OF HUMAN DEATHS FROM RABIES 1975 – 2008**

Year	Vaccination of dogs	Elimination of dogs	Animal brains examined at MRI		Human rabies deaths	
			Number	% Positive	Number	Rate *
1975	42,252	1,610	456	64.7	377	2.7
1980	120,143	36,845	420	52.5	209	1.4
1985	268,561	58,238	344	55.5	113	0.7
1990	412,586	63,233	963	70.2	154	0.9
1995	452,828	106,862	1,217	69.7	124	0.7
2000	657,597	117,790	559	88.5	109	0.6
2001	770,375	119,761	NA	NA	83	0.4
2002	797,565	117,790	NA	NA	64	0.3
2003	664,493	84,350	NA	NA	76	0.4
2004	844,123	89,530	NA	NA	98	0.5
2005	818,162	62,693	NA	NA	55	0.3
2006	964,242	12,091	1413	57.9	68	0.3
2007	1037617	-	1412	53.3	55	0.3
2008	1103258	-	1627	53.1	51	0.3

Source - Rabies Control Programme (PHVS), Medical Research Institute, Epidemiology Unit

\* Rate-Per 100,000 population

Source - Epidemiology Unit

**TABLE 28: HUMAN BRAINS TESTED FOR SUSPECTED RABIES DEATHS, 2003-2008**

Year	No. tested brains	No. brain positive	Rate (%)
2003	33	15	45
2004	42	24	57
2005	28	20	71
2006	44	31	70
2007	38	32	84
2008	43	30	70

Source – Medical Research Institute

## 22. SURVEILLANCE REPORT ON MEASLES—2008

Measles vaccine was introduced into the EPI programme in Sri Lanka towards the latter part of 1984. The morbidity and mortality due to measles continued to come down since then ( Figure 2). In spite of a relatively low incidence of measles after the introduction of measles vaccine, an outbreak of measles occurred during the period of September 1999 – June 2000. Since only about 85% of the children get seroconversion after being immunized with the first dose of measles vaccine at the age of nine months, MR was introduced in 2001 at 3 years to protect all children from getting measles infection. With the high coverage obtained for the MR immunization given at 3 years of age together with the high measles coverage obtained throughout, Sri Lanka is going for the elimination of measles.

Good quality measles surveillance is the cornerstone of measles mortality reduction. Notification of all cases of fever and rash and exclusion of all the notified cases for the possibility of having measles infection by taking blood for the presence of measles antibody is vital when a country is heading for measles elimination. Successful measles immunization programme together with the improved measles surveillance activities also help to assess the rubella burden in a country. Therefore, case based measles surveillance is essential in understanding the measles and rubella epidemiology and to target immunization strategies in the country.

During 2008, 105 cases of measles were notified to the Epidemiology Unit through the routine notification system, compared to 81 cases notified in the previous year. Notification of measles cases is being done based on the clinical suspicion of patients present with fever and rash. The notified cases are investigated further by PHII on receipt of the notification. The confirmed cases are notified to the Epidemiology Unit together with a 411 A form. However, of the 105 cases of notified measles cases, Epidemiology Unit has received only thirty seven (37) forms of , 411 A forms showing the incompleteness of sending the 411A forms.

Furthermore, detailed investigations of the cases are done by filling a special investigation form in order to gather more details about the patient. However, out of 105 notified cases detailed investigations were done only on 34 patients giving a low detailed investigation rate of 32% in 2008. Therefore, the information gathered in special investigation forms of those 34 patients have to be used to assess and evaluate the measles immunization programme in Sri Lanka in 2008. Also the limited data available have to be used to identify the strategies in the measles immunization programme . As low investigation rate would give rise to misinterpretation of data it is vital at this stage to pay better attention on special investigation of measles cases. Therefore, the effort by the MOOH and PHII is of vital importance towards upgrading measles surveillance in Sri Lanka in order to go for measles elimination.

Out of the 34 special investigations received, 21 (62 %) were found to be compatible with the case definition (Table 29) . Of the cases compatible with case definition, 7 patients have been admitted to a hospital. As per data available in the special in-

**TABLE 29: SELECTED CHARACTERISTICS OF CASES COMPATIBLE WITH CASE DEFINITION OF MEASLES –2008 (N=21)**

<b>Sex</b>	Male	13
	Female	08
<b>District</b>	Ampara	01
	Anuradhapura	01
	Badulla	01
	Colombo	01
	Hambantota	03
	Jaffna	03
	Kandy	01
	Kegalle	01
	Kurunegala	01
	Matale	01
	Matara	02
	Nuwara-Eliya	03
Ratnapura	02	
<b>Immunization status</b>	Immunized	4
	Not Immunized	17
<b>Hospital admission</b>	Yes	07
	No	13
	Unknown	01
<b>Blood Sample for serology</b>	sent	04
	Not sent	13
	Unknown	04

vestigation forms of the 7 patients who were admitted, blood samples have been sent for measles antibody in 4 patients (Table 29). Out of the 4 sample sent to MRI only 2 were found positive for Measles. As it is compulsory to check the antibody level for measles and rubella in each and every case of fever and rash and go for a laboratory diagnosis of measles when a country has measles elimination strategy in view, more attention should be paid to send blood for measles and rubella antibodies in order to arrive at a laboratory diagnosis of all cases of measles in the future.

Meanwhile, the Medical Research Institute had tested 133 blood samples received from hospitals for Measles and Rubella antibodies of which only two (2) samples had been found positive for Measles (Figure 1). Out of these two laboratory confirmed measles cases only one has been reported to the Epidemiology Unit through the routine notification system highlighting that notification rate is not 100% as yet. One blood sample had been received from B. H. Mawanella while the other was from B.H. Kegalle. Out of the 133 blood samples tested, 35 samples had been positive for rubella IGM indicating that there are more rubella cases in Sri Lanka than the measles cases and most of the suspected measles cases may not be measles cases but rubella. This also highlights that most of the patients who present with fever and rash are not measles or rubella. Therefore, it will be necessary to look for other differential diagnosis of fever and rash cases in order to arrive at a correct diagnosis.

Socio demographic distribution of the clinically compatible cases of measles is shown in Table 30.

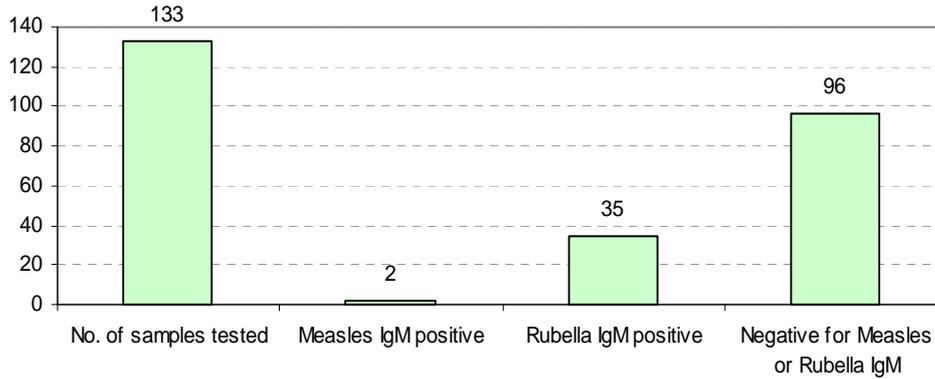
**TABLE 30: DISTRIBUTION OF THE MEASLES CASES BY VACCINATION STATUS AND BY AGE GROUPS**

(N= 21)

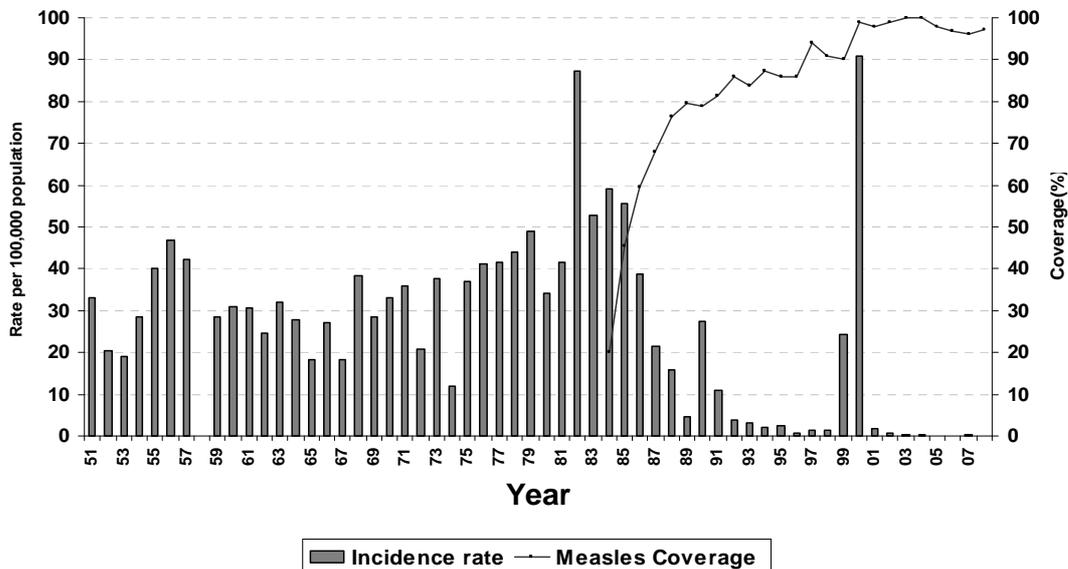
Age group	Vaccination status			Total
	Yes	No	Unknown	
0 – 6 months		2		2
>6 months – 9 months		4		4
> 9 months – 12 months		2		2
> 12 months -5 years	1	1		2
> 5 years- 10 years	1			1
> 10 years – 15 years				0
> 15 years – 20 years	1	1	2	4
>20 years – 25 years	1		1	2
> 25 years- 30 years		2		2
>30 years – 35 years			1	1
> 35 years			1	1
Total				21

Source— Special investigation reports

**FIGURE 1 : LABORATORY DIAGNOSIS OF MEASLES AND RUBELLA AT MRI —2008**



**FIGURE 2 : INCIDENCE OF MEASLES AND IMMUNIZATION COVERAGE**



### 23. SURVEILLANCE REPORT ON CDD—2008

The programme for Control of Diarrhoeal Diseases (CDD) in Sri Lanka was started in 1983 which lead to a significant improvement in surveillance activities. The main strategies of this programme were raising awareness, training of health personnel, promotion of rational usage of antibiotics and promotion of usage of oral rehydration solution. As a result a significant reduction in mortality due to diarrhoeal diseases was observed. However morbidity due to diarrhoeal diseases remains static throughout the country. Changing food habits and food marketing are associated with the incidence of diarrhoeal diseases. Natural and man made disaster also influence the spread of water borne diseases. This has created the need for finding new strategies for the control of food and water borne diseases.

In 2008, 6424 cases of Bacillary dysentery with an incidence of 3.1 per 10000 population were notified to the Epidemiology Unit. (Figure 3). The incidence of Bacillary dysentery shows a marginal reduction compared to previous years.

As shown in figure 4, districts of Badulla(516), Ratnapura (460) and Kalutara(367) notified the highest number of cases out of the total with an incidence rate of 6.0, 4.2 and 3.3 per 10000 population respectively. An unusual increase in the number of cases was observed in Moneragala (366, 8.5 per 10000 pop) when compared to previous years due to the outbreak reported from Badalkumbura MOH area (123 cases). Though Nuwara Eliya district reported less number of cases (320), incidence rate is high (4.3 per 10000 population) due to low

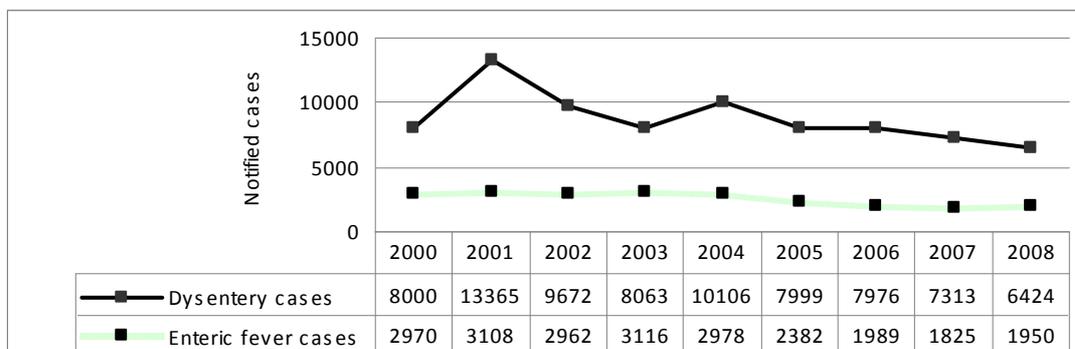
population density in the district. Reporting of Bacillary dysentery was between 50-200 cases in each week (figure 5). No specific seasonal pattern can be identified in the distribution of cases. Higher number of cases was notified in the middle of the year and end of the year.

On routine investigation of notified cases by PHII, a total of 2381 cases were confirmed clinically as Bacillary Dysentery. Analysis of the data on confirmed case (411 a) showed that there was no preponderance of cases by sex. All age groups are affected but the majority of the cases were in the 1-4 year age group (983 i.e. 41%) followed by 5-9 year age group (365 i.e. 15.3%)(Figure 6)

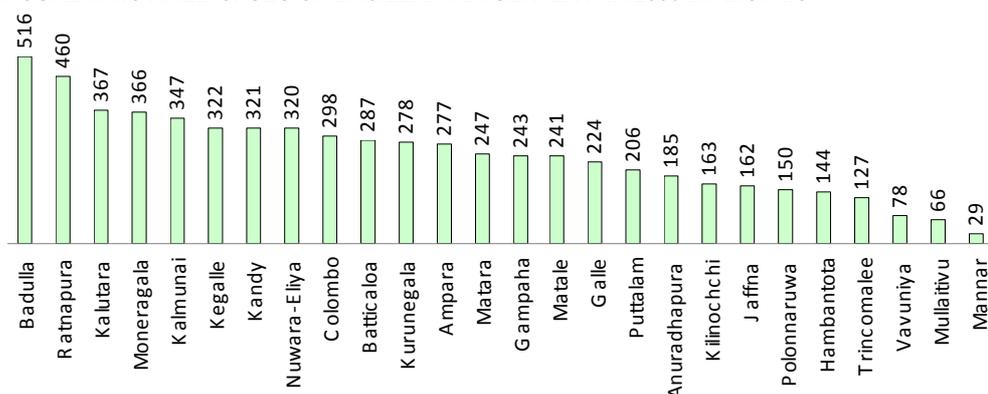
During 2008, 1950 cases of Enteric fever with an incidence rate of 1.0 per 10000 pop were notified to the Epidemiology Unit. The districts of Nuwara Eliya, Mannar, Puttlam and Badulla usually contribute the highest number of Enteric fever cases. However in 2008, highest number of cases was reported from Jaffna district (271) (figure 7). This may be due to internal migration and improved surveillance of communicable diseases. Availability of clean water and hygiene of the population are associated with the incidence of Enteric Fever. Trend of reporting of Enteric fever through out the year is not associated with the pattern of rain fall, and over 80 cases were reported during the 7<sup>th</sup> week of 2008 (figure 5).

During the year 2008, 644 cases were confirmed as enteric fever by the PHII through investigation of notified cases(411a). Analysis of the data shows that there is a male preponderance (57%) among cases. Cases were prevalent among all age groups except infants. Children aged 1-14 years were the worst affected by the disease as seen in figure 5 (34.7%) (Figure 8).

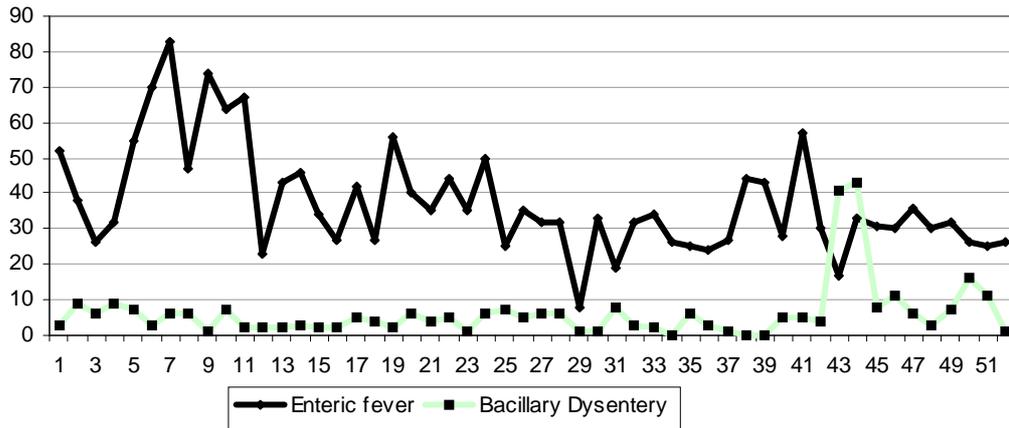
**FIGURE 3: TREND OF NOTIFIED CASES OF DYSENTERY AND ENTERIC FEVER FROM 2000-2008**



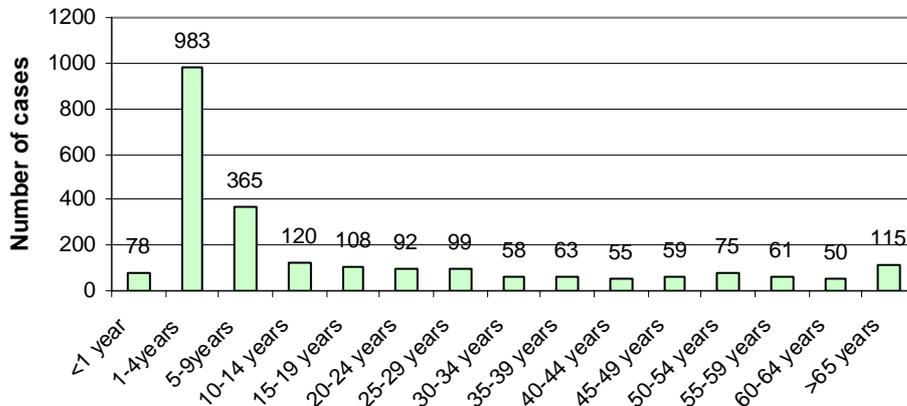
**FIGURE 4: NOTIFIED CASES OF BACILLARY DYSENTERY IN 2008 BY DISTRICT**



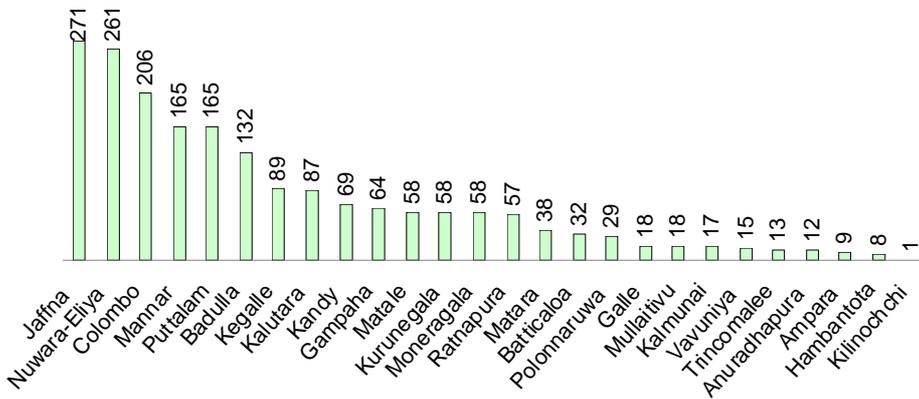
**FIGURE 5: WEEKLY DISTRIBUTION OF NOTIFIED CASES OF BACILLARY DYSENTERY AND ENTERIC FEVER –2008**



**FIGURE 6: DISTRIBUTION OF CONFIRMED CASES OF BACILLARY DYSENTERY BY AGE GROUP 2008**



**FIGURE 7: NOTIFIED CASES OF ENTERIC FEVER BY DISTRICT - 2008**



**FIGURE 8: DISTRIBUTION OF CONFIRMED CASES OF BACILLARY DYSENTERY BY AGE GROUP 2008**

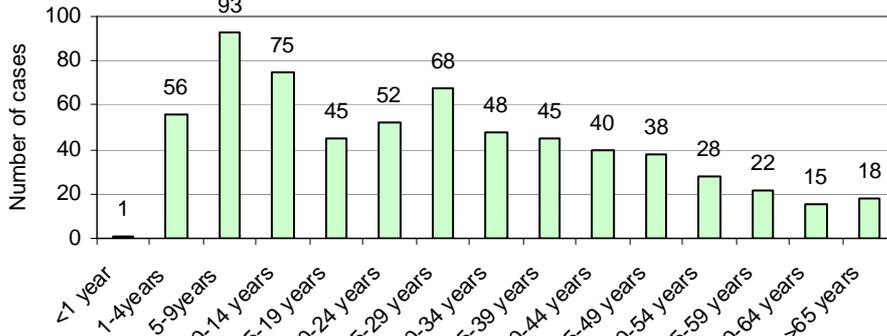


Table 31.

**24. SUMMARY OF NOTIFIABLE DISEASES – 4<sup>TH</sup> QUARTER 2009**

Health Region	Cholera	Acute Flaccid Paralysis (AFP)	Dysentery	Dengue Haemorrhagic Fever	Encephalitis	Enteric Fever	Food Poisoning	Human Rabies	Leptospirosis	Measles	Simple Contd. Fever	Tetanus	Typhus Fever	Viral Hepatitis
Colombo	0	01	77	1325	02	52	83	03	334	01	04	01	01	57
Gampaha	0	01	50	1247	05	15	18	04	197	02	0	03	02	89
Kalutara	0	02	76	192	06	15	16	01	229	0	04	0	0	32
Kandy	0	01	147	543	02	09	09	01	69	01	05	0	34	47
Matale	0	0	67	651	02	09	26	0	44	0	02	0	0	18
Nuwara Eliya	0	01	60	75	0	45	17	0	13	03	09	01	22	31
Galle	0	01	59	137	0	03	69	02	103	03	08	0	03	09
Hambantota	0	01	32	163	0	03	02	0	49	0	05	0	18	13
Matara	0	02	47	106	05	07	11	0	101	0	05	0	33	20
Jaffna	0	0	46	392	0	172	0	03	01	04	0	0	32	39
Kilinochchi	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mannar	0	0	56	14	0	28	19	0	0	01	0	0	01	22
Vavuniya	0	01	39	1056	0	62	03	0	02	04	0	0	01	27
Mullaitivu	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batticaloa	0	01	120	134	03	13	06	02	07	0	01	01	04	06
Ampara	0	02	100	54	01	0	0	01	05	01	05	0	01	79
Trincomalee	0	0	131	56	0	16	09	0	06	0	22	0	0	12
Kurunegala	0	0	132	434	03	28	02	0	93	0	03	0	33	43
Puttalam	0	01	72	285	0	19	09	0	22	01	0	0	0	05
Anuradhapura	0	0	86	169	04	02	17	03	20	04	16	0	03	33
Polonnaruwa	0	01	79	55	0	0	06	0	23	04	0	01	01	31
Badulla	0	0	178	117	0	34	14	0	17	01	03	01	25	47
Moneragala	0	03	94	55	01	03	26	01	05	02	02	0	06	12
Ratnapura	0	01	116	194	06	11	33	01	166	02	18	0	06	123
Kegalle	0	0	37	319	01	18	0	0	134	01	0	01	10	82
Kalmunai	0	0	59	236	01	02	09	0	02	0	0	0	0	07
<b>TOTAL</b>	<b>0</b>	<b>20</b>	<b>1960</b>	<b>8009</b>	<b>42</b>	<b>566</b>	<b>404</b>	<b>22</b>	<b>1642</b>	<b>35</b>	<b>112</b>	<b>09</b>	<b>236</b>	<b>884</b>

No polio cases. (from AFP surveillance system).

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Figures given may be subject to revision.

The editor welcomes accounts of interesting cases, outbreaks or other public health problems of current interest to health officials.

Such reports should be addressed to:

The Editor, Quarterly Epidemiological Bulletin

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